Apical hypertrophic cardiomyopathy with apical aneurysm

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Apical hypertrophic cardiomyopathy (AHCM), first described by Sakamoto et al (1), is typically characterized by 'giant negative T waves' (larger than 10 mm), particularly in the precordial leads, asymmetrical left ventricular (LV) apical hypertrophy on echocardiogram and spade-shaped LV configuration on left ventriculography (2).

An asymptomatic 55-year-old woman had repolarization abnormalities noted on a routine preoperative electrocardiogram (Figure 1A). The initial echocardiogram was normal, with no evidence of LV hypertrophy or segmental wall motion abnormalities. Subsequent investigations, including coronary catheterization and cardiac magnetic resonance imaging, led to the diagnosis of AHCM with LV apical aneurysm (Figures 1B and 1C).

The present case illustrates that although the electrocardiogram and echocardiogram are commonly used in clinical practice, these tests may not be sufficient to exclude the diagnosis of AHCM. Further investigations, including cardiac magnetic resonance imaging, are essential to the diagnosis of this rare condition (3,4). The second point illustrated by the present case is that patients with AHCM are at risk of developing an aneurysm at the LV apex, which can potentially lead to increased incidence of embolic complications, arrhythmias and congestive heart failure (5).

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Figure 1) A Resting 12-lead electrocardiogram demonstrating voltage criteria for left ventricular hypertrophy and negative T waves of 2 mm to 4 mm in leads II, III, aVF and V₃ to V₆. **B** Left ventricular angiogram demonstrating apical aneurysm. **C** Left ventricular long-axis two-chamber cine cardiac magnetic resonance image showing thin-walled apical aneurysm (arrow) and apical hypertrophy (asterisks)